REMARKS

The Office Action

Claims 1-25 are pending. Claims 1-6, 9, 10, and 21-25 are considered in the present Office Action. Claim 25 is objected to based on formalities. Claims 1-6, 9, and 21-24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kovesdi et al., (U.S. Patent Application Publication No. 2003/0045498; hereafter "Kovesdi"). Claims 1, 2, 4-6, 9, and 21-24 stand rejected under 35 U.S.C. § 102(b) as being anticipated by either Baffi et al., (IOVS 1998, 39:S719; hereafter "Baffi") or Reichel et al. (Ophtalmologe 1999, 96:570-577; hereafter "Reichel"). And claims 1, 10, and 25 are rejected under 35 U.S.C. § 103(a) as being obvious in view of Kovesdi in view of either Tezel et al. (Exp. Eye Res. 1998, 66:807-815; hereafter "Tezel"), Funk et al. (U.S. Patent No. 6,667,176; hereafter "Funk"), or Williams et al. (Nature 1988, 336:684-687; hereafter "Williams"). Applicants address each of these rejections below.

Claim Amendments

Applicants have amended claims 1 and 25. Support for the amendment to claim 1 is found in the specification, for example, at page 6, lines 14-15. The amendment of claim 25 merely corrects a grammatical error. No new matter is added by these amendments.

Objection to Claim 25

Claim 25 is objected to on the basis of formalities. Applicants have amended claim 25 as suggested by the Examiner, and this objection may be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 1-6, 9, and 21-24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kovesdi. This rejection is traversed as applied to the amended claims.

M.P.E.P. § 2131 states:

> [A] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently, described in a single prior art reference (emphasis added).

This standard for anticipation has not been met because Kovesdi fails to describe each and every element of the rejected claims. Claim 1, from which claims 2-6, 9, and 21-24 depend, has been amended to require an adenoviral vector comprising "no adenoviral coding DNA sequences" (emphasis added). Kovesdi discloses an adenoviral vector that is deficient for the E1, E2, E3, and E4 viral coding DNA regions (Page 4, paragraphs 0028 and 0029), but not the L region of the adenoviral genome. As the Kovesdi vector contains the adenoviral L region, Kovesdi does not disclose an adenoviral vector with "no adenoviral coding DNA sequences." Kovesdi therefore cannot anticipate any of claims 1-6, 9, or 21-24, and the rejection of these claims under 35 U.S.C. § 102(e) may be withdrawn.

Claims 1, 2, 4-6, 9, and 21-24 also stand rejected under 35 U.S.C. § 102(b) as being anticipated by Baffi. The Office states that Baffi teaches "human retinal pigment epithelial cells comprising a second-generation adenoviral comprising a promoter operatively linked to a B-gal gene." This rejection is respectfully traversed.

As indicated by the Office, Baffi teaches a second generation adenoviral vector encoding a β-galactosidase reporter gene. Second generation adenoviral vectors feature deletions in the adenoviral E1, E2, E3, and/or E4 regions. These second generation adenoviral vectors, however, still contain most of the adenoviral genes, including all open reading frames encoding structural proteins. In particular, Baffi teaches that their adenoviral vector contains "deletions in E1, E2b (Ad polymerase) and E3" (abstract, lines 6-9 and lines 13-15). By contrast, the present vectors are third generation adenoviral vectors that are devoid of all coding viral genes and contain only the inverted terminal repeats and the packaging signal. This is reflected in claim 1, which requires that the

vector comprise "no adenoviral coding DNA sequences." As Baffi fails to teach an adenoviral vector lacking all adenoviral coding DNA sequences, Baffi cannot anticipate any of claims 1-6, 9, or 21-24. The rejection of these claims may be withdrawn.

Claims 1, 2, 4-6, 9, and 21-24 stand further rejected under 35 U.S.C. § 102(b) as being anticipated by Reichel. The Office states that Reichel teaches "gene transfer into retinal pigment epithelium (RPE) (page 3)." The Office also states that Reichel teaches "using adenovirus for gene transfer in the eye, wherein the adenovirus has gene regulated by a promoter (pages 7-8 and 10)," and that "the adenovirus lacks all viral genes (page 8)." This rejection is respectfully traversed.

Reichel is a review article disclosing gene transfer approaches for ophthalmology. In summarizing the state of the art at the time of its publication, Reichel discloses gene transfer into the RPE (page 3), but teaches no more than what was described by Applicants about the state of the art in the present specification (page 3, line 8 – page 4, line 9). Nowhere on page 3 of Reichel, or elsewhere in this reference, is it disclosed that an adenoviral vector lacking all adenoviral coding DNA sequences be used for gene transfer into the RPE. By contrast, the instant claims require RPE cells comprising an adenoviral vector that lacks all adenoviral coding DNA sequences.

Moreover, with respect to Reichel's teaching of adenoviral vectors lacking viral genes at page 8, Applicants submit that this passage, like the remainder of Reichel, fails to disclose that adenoviral vectors lacking all adenoviral coding DNA sequences be used for gene transfer specifically into the RPE. Rather, Reichel teaches encapsidated adenovirus mini chromosomes (EAMs), but not for transfer into the RPE. Neither does Reichel indicate that such vectors would be successful for this purpose.

As Reichel fails to teach RPE cells comprising an adenoviral vector deficient of all adenoviral coding DNA sequences, Reichel cannot anticipate claims 1, 2, 4-6, 9, or 21-24. The rejection of these claims may be withdrawn

Rejections under 35 U.S.C. § 103(a)

Claims 1, 10, and 25 stand rejected under 35 U.S.C. § 103(a) for obviousness over Kovesdi in combination with either Tezel et al. (Exp. Eye Res. 1998, 66:807-815; hereafter "Tezel"), Funk et al. (U.S. Patent No. 6,667,176; hereafter "Funk"), or Williams et al. (Nature 1988, 336:684-687; hereafter "Williams"). This rejection is respectfully traversed.

M.P.E.P. § 2142 states:

> To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q. 2d 1438 (Fed. Cir. 1991).

This standard for obviousness has not been met in the present case as the combination of references cited by the Office does not teach or suggest all of the limitations of the claimed invention. Claim 1, as indicated above, is directed to a pigment epithelial cell of the eye comprising an expression vector having no adenoviral coding DNA sequences. Claims 10 and 25 are directed to a method of producing such vector-containing pigment epithelial cells by cultivating them either in serum-free medium, in the presence of a feeder layer, or both. The Office has cited Kovesdi in combination with Tezel, Funk, or Williams as teaching the components of these claims. As detailed above, however, Kovesdi lacks an important element of the present claims. Although Kovesdi teaches an adenoviral vector deficient for some viral coding DNA sequences, it does not teach an adenoviral vector deficient for all viral coding DNA sequences. Therefore, Kovesdi does not disclose or suggest an adenoviral vector comprising "no adenoviral

coding DNA sequences," as required by the rejected claims.

The secondary references, Tezel, Funk, and Williams, do not provide the teaching missing from the Kovesdi reference. None of these references discloses an adenoviral vector lacking all adenoviral coding sequences, as required by claims 1, 10, and 25. The cited references therefore cannot and do not support a *prima facie* case of obviousness for any of claims 1, 10, or 25, and the rejection of these claims under § 103 may be withdrawn.

CONCLUSION

Applicants submit that the claims are now in condition for allowance, and such action is respectfully requested. If there are any charges or any credits, please apply them to Deposit Account No. 03-2095.

Respectfully submitted,

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